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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 10/069,068      | 02/21/2002  | Borje Sellergren     | 003300-908          | 9014             |

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EXAMINER

PEZZUTO, HELEN LEE

ART UNIT PAPER NUMBER

1713

DATE MAILED: 10/10/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/069,068

Applicant(s)

SELLERGREN ET AL

Examiner

Helen L. Pezzuto

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-21 and 23-37 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-21 and 23-37 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 21 February 2002 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☒ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 3, 5.
- 4) ☐ Interview Summary (PTO-413) Paper No(s) \_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

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### DETAILED ACTION

Applicant's amendment to claims 4-5, 7, 10-11, 21, 23, the cancellation of claim 22, and the addition of claims 24-37 filed in the preliminary amendment on 2/21/02 are herein acknowledged. Currently, claims 1-21, and 23-37 are pending in this application.

### *Claim Rejections - 35 USC § 103*

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. Claims 1-21, and 23-37 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nakayama et al. (Langmuir 1999, 15, 5560-5566) or Wang et al. (J. Chem. Tech. Biotechnol. 1997, 70, 355-362) or Arnold et al. (US-648) or Arnold et al. (US-428) or Arnold et al. (US-637) or Mosbach et al. (US-154).

The Langmuir article from Nakayama et al. is related to surface photo-graft copolymerization on dithiocarbamate derivatized PST film, comprising block A as the bottom

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layer and block B as the top layer. Heparin-immobilized and protein-immobilized, and controlled drug-release surface studies were carried out. The presently claimed polymer and process fall within the scope of prior art studies, wherein the template is slowly released in the course of the studies. Prior art polymer is derived from photo polymerization process and is silent regarding to the use of an initiator.

The Wang et al. article concerns with the process of surface molecular imprinting on porous dithiocarbamoyl polyacrylonitrile membranes via photograft polymerization means using theophylline as the template molecule. Subsequently, the template is removed from the polymerized layer on the membrane surface. Prior art is silent regarding the use of an initiator.

U.S. 5,310,648 to Arnold et al. discloses an imprinted matrix suitably used in applications such as chromatographic separations, drug delivery, and biosensors. Suitable template includes amino acids, proteins, DNA and polysaccharides. Prior art exemplified free radical polymerization using free radical initiator such as AIBN. The preparation of imprinted polymers using protein

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template on porous silica support was exemplified (see Example VIII) which embraces the instant process steps.

U.S. 5,786,428 to Arnold et al. discloses an adsorbent containing a molecular imprinting polymer matrix with selectivity towards amino acid or peptides. Free radical polymerization of the monomers on silica support was exemplified ( see Example 2).

U.S. 6,063,637 to Arnold et al. discloses biosensors for analysis of sugars and amino acids. Prior art sensor comprises a polymer matrix containing a metal complex having a polymerizable functionality and template. Various support materials are disclosed in the reference (col. 14, lines 47-61), wherein polymerization is carried out into the support structure (col. 14, lines 62-67). Free radical polymerization using AIBN is disclosed and exemplified.

U.S. 6,127,154 to Mosbach et al. discloses the preparation of polymeric or oligomeric compounds suitably function as molecular imprinted materials for various biochemical applications using various removable templates. Polymerization of silica beads was exemplified (see Example 9).

All references discussed above are directed to the preparation of molecular imprinting polymer system

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containing removable templates on various inorganic and organic supports. The present azo-initiator species expressed in claims 8, 17, 19, 23, and 31 are not expressively exemplified in the reference. Prior art references, do, however, disclose and exemplified AIBN, which has analogous function as the claimed species. Absent a showing of criticality or unexpected result for the claimed azo-initiator species, the examiner is of the position that the claimed species are obvious variants of prior art initiator, and not deemed to impact patentability. Prior art references are silent regarding the use of microwave irradiation for polymerization, but do, disclose UV irradiation. Since microwave and UV are within the photo spectrum commonly used in photopolymerization processes, no patentability is seen for selecting microwave over prior art UV radiation in the absence of unexpected or unusual results demonstrated for using the instant microwave irradiation. Since prior art polymer system meet the terms of the present claims, the instant invention is deemed to be within the sphere of obviousness encompassed by the disclosures of the references.

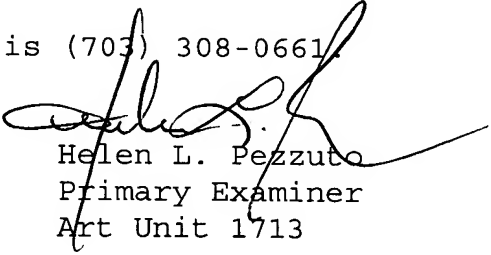
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3. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Helen L. Pezzuto whose telephone number is (703) 308-2393. The examiner can normally be reached on 8 AM to 4 PM, Monday thru Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Wu can be reached on (703) 308-2450. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0661.



Helen L. Pezzuto  
Primary Examiner  
Art Unit 1713

hlp